WHAT IS CLAIMED IS

1. A packet scheduling method for streaming multimedia data by a server in a network, the network including the server for providing multimedia data divided into picture groups each having a sequence of N pictures and a terminal for displaying the multimedia data received from the server in a streaming manner, the method comprising the steps of:

dividing the sequences of the pictures into motion part packets and texture part packets, and assigning priorities to the packets according to temporal scaling;

determining a threshold for a predetermined priority in consideration of conditions of a channel and a buffer status of the terminal and constructing a substream using packets with priorities below the threshold within the respective picture groups; and

sequentially transmitting the packets in the constructed substream to the terminal.

2. The packet scheduling method according to claim 1, wherein the motion part packets are assigned priorities higher than those of the texture part packets.

3. The packet scheduling method according to claim 1, wherein the priorities of the packets are assigned so that an

I-frame and a motion part of even-numbered P-frames of each picture sequence are assigned a highest priority and a texture part of odd-numbered P-frames of each picture sequence is assigned a lowest priority.

4. The packet scheduling method according to claim 1, wherein the threshold θ_0 for the predetermined priority is determined by the following equation:

$$\theta_o = \mathrm{argmax}_{\Theta}\{\varepsilon_G^{(\theta)} < \gamma,\ E[S^{(\Theta)}]\} < C$$

where θ is 0, 1, … and is equal to a number of packets to which priorities are assigned, γ is a threshold of a preset decoding failure probability, $\varepsilon_G^{(\theta)}$ is the decoding failure probability, $E[S^{(\theta)}]$ is an average data rate of the substream, and C is a channel bandwidth.

5. The packet scheduling method according to claim 1, wherein the threshold for the predetermined priority is updated according to variations of data throughput periodically reported from the terminal.

6. The packet scheduling method according to claim 1, wherein the packets received by the terminal have a loss rate of $\varepsilon_p^{(\theta)}$ calculated by the following Equations:

$$\varepsilon_p^{(\theta)} = \varepsilon^{\beta};$$

$$\beta = \frac{-2B^{(\theta)}(C - E[S^{(\theta)}])}{\sum_k v^{(\theta)}[k]};\ \text{and}$$

$$\varepsilon_G^{(\theta)} = \begin{cases} \varepsilon_p^{(\theta)} E[S^{(\theta)}], \theta \le N-1 \\ \varepsilon_p^{(\theta)} E[S^{(N-1)}], \theta > N-1 \end{cases}.$$

7. The packet scheduling method according to claim 1, wherein the packets received by the terminal have a loss rate of $\varepsilon_p^{(\theta)}$ calculated in consideration of a variance of a channel bandwidth by the following equations:

$$\varepsilon_p^{(\theta)} = \varepsilon^{\beta};$$

$$\beta = \frac{-2B^{(\theta)}(C - E[S^{(\theta)}])}{\sum_k v^{(\theta)}[k] + \sigma_Y^2};\ \text{and}$$

$$\varepsilon_G^{(\theta)} = \begin{cases} \varepsilon_p^{(\theta)} E[S^{(\theta)}], \theta \le N-1 \\ \varepsilon_p^{(\theta)} E[S^{(N-1)}], \theta > N-1 \end{cases}.$$